

1. A method of loading a plurality of food items in multiple layers comprising the steps of:

collecting food items in a first plurality of groups, each of said groups having a plurality of food items, in a staging area;

displacing said first plurality of groups substantially simultaneously downwardly into an accumulating and storage area, thereby forming a plurality of first layer groups of said food items therein;

collecting in said staging area a second plurality of said groups of food items, each of said second plurality of said groups having a plurality of food items;

displacing said second plurality of groups substantially simultaneously downwardly into said accumulating and storage area such that said second plurality of groups forms a plurality of second layer groups of said food items superposed to said plurality of first layer groups of said food items, thereby forming a plurality of two layer-groups of food items; and

displacing substantially simultaneously said plurality of two-layer groups of food items downwardly into a receptacle in a packing area.

2. The method of claim 1 wherein said step of displacing said first plurality of groups includes the step of allowing said first plurality of groups to fall by gravity into said accumulating and storage area.

3. The method of claim 1 wherein said step of displacing said second plurality of groups includes the step of allowing said first plurality of groups to fall by gravity into said accumulating and storage area.

4. The method of claim 1 wherein said step of displacing said plurality of two-layer groups includes the step of allowing said plurality of two-layer groups to fall by gravity into said receptacle.

5. The method of claim 1 wherein said step of displacing said plurality of two-layer groups includes the step of substantially simultaneously performing a subsequent step of collecting food items in a first plurality of groups, each of said groups having a plurality of food items, in said staging area.

6. The method of claim 1 further comprising the step of displacing said receptacle containing said plurality of two-layer groups of food items from said packing area.

7. The method of claim 6 further comprising the step of placing a second receptacle in said packing area.

8. A system for loading food items in multiple layers comprising:

a staging device for sequentially collecting food items into a plurality of groups, each of said groups having a plurality of food items, and for displacing said plurality of groups substantially downwardly;

an accumulating and storage device for receiving said groups substantially simultaneously from said staging device, thereby sequentially forming successive layers of groups of said food items in an accumulating and storage area, and for displacing a predetermined number of received layers of said groups downward substantially simultaneously; and

a packing device for receiving said predetermined number of received layers of said groups from said accumulating and storage device in a packing area.

9. The system of claim 8 wherein said staging device allows said plurality of groups to fall by gravity into said accumulating and storage area.

10. The system of claim 8 wherein said accumulating and storage device allows said predetermined number of received layers of said groups to fall by gravity into said packing area.

11. The system of claim 1 wherein said staging device includes a lug chain drive having lugs spaced to form said groups therebetween.

12. The system of claim 8 wherein said staging device includes a pair of laterally reciprocating rods, whereby said rods support said groups thereon and displace sidewardly to allow said groups to fall downwardly by gravity to said accumulating and storage area.

13. The system of claim 8 wherein said accumulating and storage device includes a pair of laterally reciprocating rods, whereby said rods support said groups thereon and displace sidewardly to allow said groups to fall downwardly by gravity to said packing area.

14. The system of claim 8 wherein said accumulating and storage area includes a plurality of dividers positioned to direct said groups and maintain said groups intact and aligned as said groups fall from said staging area.

15. The system of claim 14 wherein said packing device includes a receptacle having a plurality of separators dividing said receptacle into cavities shaped to receive said predetermined number of received layers of said groups from said accumulating and storage area, and said dividers are shaped and positioned to correspond to said separators such that separation between said plurality of groups is maintained.

16. The system of claim 8 further comprising a controller for controlling said staging device, said accumulating and storage device and said packing device such that said staging device receives groups of said food items and positions said groups substantially above said accumulating and storage device as said accumulating and storage device allows said predetermined number of received layers of said groups to fall by gravity to said packing device.

17. The system of claim 15 further comprising a pair of rotatable tucking flaps positioned between said accumulating and storage area and said packing area, said tucking flaps being shaped to rotate downwardly into said packing area to ensure that said predetermined number of received layers of said groups fall into said cavities in proper alignment.

18. The system of claim 17 wherein said tucking flaps include notches shaped to provide clearance for said separators, thereby allowing said flaps to rotate below horizontal into said cavities.

19. A method of loading food items in multiple layers comprising the steps of:

collecting food items in a first plurality of groups, each of said groups having a plurality of food items, in a staging area;

displacing said first plurality of groups by allowing said first plurality of groups to fall by gravity substantially simultaneously downwardly into an accumulating and storage area, thereby forming a plurality of first layer groups of said food items therein;

collecting in said staging area a second plurality of said groups of food items, each of said second plurality of said groups having a plurality of food items;

displacing said second plurality of groups by allowing said second plurality of groups to fall by gravity substantially simultaneously downwardly into said accumulating and storage area such that said second plurality of groups forms a plurality of second layer groups of said food items superposed to said plurality of first layer groups of said food items, thereby forming a plurality of two layer-groups of food items; and

displacing substantially simultaneously said plurality of two-layer groups of food items downwardly by gravity into a receptacle in a packing area.

20. A method of loading food items in multiple layers comprising the steps of:

collecting food items in a first plurality of groups, each of said groups having a plurality of food items, in a staging area;

displacing said first plurality of groups by allowing said first plurality of groups to fall by gravity substantially simultaneously downwardly into an accumulating and storage area, thereby forming a plurality of first layer groups of said food items therein;

collecting in said staging area a second plurality of said groups of food items, each of said second plurality of said groups having a plurality of food items;

displacing said second plurality of groups by allowing said second plurality of groups to fall by gravity substantially simultaneously downwardly into said accumulating and storage area such that said second plurality of groups forms a plurality of second layer groups of said food items superposed to said plurality of first layer groups of said food items, thereby forming a plurality of two layer-groups of food items; and

displacing substantially simultaneously said plurality of two-layer groups of food items downwardly by gravity into a receptacle in a packing area and substantially simultaneously performing a subsequent step of collecting food items in a first plurality of groups, each of said groups having a plurality of food items, in said staging area.

21. A system for loading food items in multiple layers comprising:

a staging device for sequentially collecting food items into a plurality of groups, each of said groups having a plurality of food items, said staging device including a lug chain drive having lugs spaced to form said groups therebetween, and for allowing said plurality of groups to fall substantially downwardly by gravity;

an accumulating and storage device for receiving said groups substantially simultaneously from said staging device, thereby sequentially forming successive layers of groups of said food items in an accumulating and storage area, and for allowing a predetermined number of said received layers of said groups to fall downwardly substantially simultaneously by gravity; and

a packing device for receiving in receptacles said predetermined number of received layers of said groups from said accumulating and storage device in a packing area.

22. The system of claim 21 further comprising a pair of rotatable tucking flaps positioned between said accumulating and storage area and said packing area, said tucking flaps being shaped to rotate downwardly into said packing area to ensure that said predetermined number of received layers of said groups fall into said cavities in proper alignment.

23. A system for loading food items in multiple layers comprising:

a staging device for sequentially collecting food items into a plurality of groups, each of said groups having a plurality of food items, said staging device including a lug chain drive having lugs spaced to form said groups therebetween, and for allowing said plurality of groups to fall substantially downwardly by gravity;

an accumulating and storage device for receiving said groups substantially simultaneously from said staging device, thereby sequentially forming successive layers of groups of said food items in an accumulating and storage area, and for allowing a predetermined number of said received layers of said groups to fall downwardly substantially simultaneously by gravity, said accumulating and storage area including a plurality of dividers positioned to direct said groups and maintain said groups intact and aligned as said groups fall from said staging area; and

a packing device for receiving in receptacles said predetermined number of received layers of said groups from said accumulating and storage device in a packing area.

24. A system for loading food items in multiple layers comprising:

a staging device for sequentially collecting food items into a plurality of groups, each of said groups having a plurality of food items, said staging device including a lug chain drive



having lugs spaced to form said groups therebetween, and for allowing said plurality of groups to fall substantially downwardly by gravity;

an accumulating and storage device for receiving said groups substantially simultaneously from said staging device, thereby sequentially forming successive layers of groups of said food items in an accumulating and storage area, and for allowing a predetermined number of said received layers of said groups to fall downwardly substantially simultaneously by gravity, said accumulating and storage area including a plurality of dividers positioned to direct said groups and maintain said groups intact and aligned as said groups fall from said staging area, said accumulating and storage device including a pair of laterally reciprocating rods, whereby said rods support said groups thereon and displace sidewardly to allow said groups to fall downwardly by gravity; and

a packing device for receiving in receptacles said predetermined number of received layers of said groups from said accumulating and storage device in a packing area.

25. A system for loading food items in multiple layers comprising:

a staging device for sequentially collecting food items into a plurality of groups, each of said groups having a plurality of food items, said staging device including a lug chain drive having lugs spaced to form said groups therebetween, and for allowing said plurality of groups to fall substantially downwardly by gravity, said staging device including a pair of laterally reciprocating rods, whereby said rods support said groups thereon and displace sidewardly to allow said groups to fall downwardly by gravity to said accumulating and storage area;

an accumulating and storage device for receiving said groups substantially simultaneously from said staging device, thereby sequentially forming successive layers of groups of said food items in an accumulating and storage area, and for allowing a predetermined number of said received layers of said groups to fall downwardly substantially simultaneously by gravity, said accumulating and storage area including a plurality of dividers positioned to direct

said groups and maintain said groups intact and aligned as said groups fall from said staging area; and

a packing device for receiving in receptacles said predetermined number of received layers of said groups from said accumulating and storage device in a packing area.

26. A system for loading food items in multiple layers comprising:

a staging device for sequentially collecting food items into a plurality of groups, each of said groups having a plurality of food items, said staging device including a lug chain drive having lugs spaced to form said groups therebetween, and for allowing said plurality of groups to fall substantially downwardly by gravity;

an accumulating and storage device for receiving said groups substantially simultaneously from said staging device, thereby sequentially forming successive layers of groups of said food items in an accumulating and storage area, and for allowing a predetermined number of said received layers of said groups to fall downwardly substantially simultaneously by gravity; and

a packing device for receiving in receptacles said predetermined number of received layers of said groups from said accumulating and storage device in a packing area, said packing device including a pair of rotatable tucking flaps positioned between said accumulating and storage area and said packing area, said tucking flaps being shaped to rotate downwardly into said packing area to ensure that said predetermined number of received layers of said groups fall into said cavities in proper alignment.

27. The system of claim 26 wherein said packing device includes a receptacle having a plurality of separators dividing said receptacle into cavities shaped to receive said predetermined number of received layers of said groups from said accumulating and storage area, and wherein said tucking flaps include notches shaped to provide clearance for said separators, thereby allowing said flaps to rotate below horizontal into said cavities.